

Examiner's Amendment
 10/682,082
 10/03/05

What Is Claimed Is:

1. An optical deflector comprising:
 a motor that drives a rotative polygon mirror deflecting rays emitted from a light source;
 a drive circuit board, mounted in a housing, on which an electronic part controlling the motor is mounted;
 a first through hole on a lower face of the electronic part, formed on the drive circuit board;
 and
 a radiating member that, through the first through hole, directly contacts the electronic part or indirectly contacts the electronic part through an intervening conductive member.
2. The optical deflector according to claim 1, wherein the drive circuit board is constructed from a metal and the radiating member contacts the drive circuit board.
3. An optical deflector comprising:
 a motor that drives a rotative polygon mirror deflecting and scanning rays emitted from a light source; and
 a drive circuit board, mounted in a housing, on which an electronic part such as an integrated circuit controlling the motor is mounted,
 wherein the drive circuit board is constructed from

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a metal, the rotative polygon mirror is on an upper face of the drive circuit board, and the electronic part is mounted on a lower face of the drive circuit board.

4. The optical deflector according to claim 3, wherein the lower face of the drive circuit board is a wiring pattern face, a connection hole is formed on the drive circuit board, and drive coils constituting the motor and a wiring pattern are electrically connected through the connection hole.

5. The optical deflector according to claim 4, wherein a hole is formed in the drive circuit board in opposed relation to drive magnets disposed to face the drive coils and a position detector for detecting the position of the drive magnets is disposed within the hole.

6. An optical deflector comprising:
a motor that drives a rotative polygon mirror deflecting and scanning rays emitted from a light source;

a drive circuit board, mounted in a housing, on which an electronic part such as an integrated circuit controlling the motor is mounted;

wherein:

the rotative polygon mirror is on an upper face of the drive circuit board, and on a lower face of the drive circuit board, a first wiring pattern is

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formed and the electronic part is mounted; on the upper face of the drive circuit board, a second wiring pattern electrically connected with drive coils constituting the motor is formed and a position detector for detecting positions of drive magnets disposed to face the drive coils is disposed; and

the first wiring pattern and the second wiring pattern are electrically connected by a connection hole formed on the drive circuit board.

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7. An optical deflector comprising:

a motor that drives a rotative polygon mirror deflecting and scanning rays emitted from a light source;

a drive circuit board on which an electronic part such as an integrated circuit controlling the motor is mounted;

wherein:

the rotative polygon mirror is on an upper face of the drive circuit board, and on a lower face of the drive circuit board, a first wiring pattern is formed and the electronic part is mounted;

on the upper face of the drive circuit board, a second wiring pattern electrically connected with drive coils constituting the motor is formed and a subboard on which a position detector for detecting positions of drive magnets disposed to face the

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drive coils is disposed is secured; and
 the first wiring pattern and the second wiring
 pattern are electrically connected by a connection
 hole formed on the drive circuit board.

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8. The optical deflector according to claim 7,
 wherein a hole is formed on the drive circuit board,
 the subboard bridges the hole, and the position
 detector is disposed on an upper face of the
 subboard within the hole.

9. An optical scanner comprising:
 an optical deflector comprising:
 a motor that drives a rotative polygon mirror
 deflecting rays emitted from a light source;
 a drive circuit board, mounted in a housing, on
 which an electronic part controlling the motor is
 mounted;

a first through hole on a lower face of the
 electronic part, formed on the drive circuit board;
 and

a radiating member that, through the first
 through hole, directly contacts the electronic part
 or indirectly contacts the electronic part through
 an intervening conductive member.

10. The optical scanner according to claim 9,
 wherein the housing is constructed from a metal, and
 the housing is the radiating member.

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11. The optical scanner according to claim 9,
wherein a second through hole is provided on a
bottom wall of the housing for being communicated
with the first thorough hole, and the radiating
member is exposed to outside the housing.

12. An optical scanner comprising:
an optical deflector comprising:
a motor that drives a rotative polygon mirror
deflecting and scanning rays emitted from a light
source; and
a drive circuit board, mounted in a housing, on
which an electronic part such as an integrated
circuit controlling the motor is mounted;
wherein a bottom wall of the housing is constructed
from the drive circuit board, the electronic part is
mounted outside the housing.

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